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Secretary
Federal Communications Commission
1919 M St. NW
Washington DC

Enclosed please find 10 original, signed copies of our reply comments in the Advanced Television Proceeding, known as DTV, the Sixth Further Notice of Proposed Rule Making in MM Docket No. 87-268.

If there are any questions on this matter I can be reached at 907-248-5959, 907-248-5937, or e-mail at jeremidl@kyes.com

Yours,

Jeremy Lansman

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Before the
Federal Communications Commission
Washington, D.C.

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JAN 27 1997

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In the Matter of)
Advanced Television Systems)
and Their Impact upon the)
Existing Television Broadcast)
Service)

MM Docket No. 87-268

**Reply Comments in response to the Sixth Further Notice Of Proposed Rule
Making**

**Fireweed Communications Corporation
KYES-TV, Anchorage, Alaska**

To: The Commission:

January 23, 1997

Fireweed Communications Corporation, Licensee of KYES-TV, Channel
5, Anchorage, Alaska, hereby submits this reply to comments in the
Commission's Sixth Further Notice of Proposed Rule Making (FCC 96-317,
released August 14, 1996).

FIREWEED THANKS

Fireweed wishes to thank those who filed their comments
electronically, and those who posted comments on their own web sites, for
they made their comments readily available to us and others via the internet.
Thanks also to the Government and the FCC for promoting more open
government via the internet.

CHANNELS 2-6 MUST BE RETAINED

Comments by du Triel, Lundin and Rackley (dLR) set forth many facts supporting retention of channels 2-6 for television broadcasting. Fireweed wishes to note their excellent presentation of engineering facts supporting retention of channels 2-6, and DTV "loaner" channels. However, dLR and others recommend more study of low VHF channels. Fireweed believes the Charlotte study is sufficiently clear; low band VHF DTV transmission was superior to analog at a DTV power 12 dB below analog. If any service channel range needs more study, DTV service on UHF should be questioned due to the use of a costly UHF preamp at Charlotte. Fireweed believes more study is needed to clarify DTV transmission objectives in all parts of the spectrum, UHF, High VHF and Low VHF. Low VHF should not be singled out.

It might help to recall present NTSC coverage. NTSC contours for a maximum facility station in zone two (most of the US) are:

Grade B - Channel 2-6 = 80 Miles; Channel 7-13 = 74.7 miles; Channel 14-96 = 66.5 miles.

Grade A - Channel 2-6 = 45.4Miles; Channel 7-13 = 52.8 miles; Channel 14-96 = 50.8 miles.

DTV service to an 80 mile distant contour is as improbable on UHF as it is common on VHF. The public interest requires retention of low VHF for DTV. Without Low VHF, viewers, especially rural ones, will experience greater disruption.

LOANER CHANNELS

Various comments were made suggesting DTV channels should "replicate", Grade A coverage of an NTSC station, not Grade B.

Grade B replication minimizes disruption to viewers by allowing them to choose when to purchase a DTV receiver, instead of forcing them to switch on a certain date. However, complete replication of all NTSC grade B coverage is impossible. High powered DTV transmission will interfere with existing NTSC signals. Many stations, such as KYES, cannot afford super high powered UHF transmitters, have local zoning, RFR, and other problems. Also, DTV allotments will impact some translator and LPTV service. In other words, viewer disruption is inevitable, no matter what the scenario.

The AFCCE said using a much more sensitive UHF receiver with an antenna mounted pre-amplifier allowed lower UHF transmitter power. However, AFCCE did not account for the fact that UHF DTV tests at Charlotte used just such a pre-amp, leading to optimistic and false

conclusions. They also failed to address problems receiver manufacturers might have producing pre-amps for consumers.

The Broadcasters Caucus, starting down the same path as the AFCCE stops halfway by suggesting receiver manufacturers should make slightly more sensitive TV sets (7 dB noise figure instead of 10 dB as proposed by the FCC). A modest improvement like this would reduce the insanely ridiculous 20 megawatt peak power required of KYES for UHF replication of grade B coverage to an impossible 10 Megawatts. Assuming the Caucus DTV TV set sensitivity goal can be met by manufacturers, their proposed improvement would still leave many rural viewers un-served and small market stations struggling to pay the electric bill.

Citadel Communications Co., du Treil, Lundin & Rackley, inc., and others have proposed "replicating", at most, present NTSC Grade A contours, and calling the new channel a "loaner". Fireweed believes this is an idea that should be seriously considered. Sure, some viewers would be inconvenienced on NTSC to DTV switchover day, but some viewer inconvenience is inevitable anyway. Not all stations can build fully replicating UHF facilities. NTSC signals, in some locations, will receive interference from high power DTV service. If we replicate Grade A contours, there will be less impact on and interference to existing NTSC, LPTV and

translator service, reduced impact on small market station budgets, and reduced environmental impact from operation of super power UHF transmitters.

As suggested by du Triel and others, grade A replication channels would be considered loaners. A "loaner" plan does not rule out auctions, but it does imply most stations would return to their NTSC channel after transition. Nevertheless, the government could still set aside channels for non-broadcast use much as has been done for existing UHF-TV land mobile reservations. In many cases, higher channel UHF stations should be delighted to move their "permanent" channel to a lower dial position¹.

Fireweed suggests that a "loaner" channel should be allowed to convert from DTV to NTSC when the permanent channel converts from NTSC to DTV. Power of loaner NTSC stations would probably have to be recalculated, in order to prevent interference. However, if centrally located, a majority of viewers could hang on to their old NTSC TV sets a bit longer by watching the remaining loaner NTSC signals.

¹ Propagation is not that much worse in channels 60-69 than 14 to 59. However, in its comments, Fireweed pointed out that common baluns it tested had much higher loss at the top of the UHF band.

LOW BAND VHF NOISE

Various comments were directed toward adjustments of the Low VHF DTV "cliff" contour.

O. Bendov, in an excellent attachment to the AFCCE comments points out the FCC has not accounted for galactic noise. Bendov suggests, primarily due to galactic noise, the low VHF DTV Cliff contour should be raised from 26.8 to 32.5 dBu. However, Mr. Bendov failed to consider the additional effect of man made noise. It is interesting to note the old NTSC Planning Factors used a 15 dB correction for urban noise at the Grade A channel 2-6 contour. Cliff contours will probably, most often, fall in a suburban to rural area where man made noise will be quite a bit lower than urban, but more than rural. No doubt, in addition to an adjustment for galactic noise as proposed by Bendov, an additional adjustment should be made in the DTV Cliff Contour to account for man made noise. The "cliff" contour should be greater than 32.5 dBu.

Fireweed does not have the appropriate CCIR reports showing man made radio noise data, but an adjustment for Galactic and man made noise must be applied to the low band VHF DTV planning factors, or low VHF DTV coverage will fall short of expectations.

MULTIPLE DTV CONTOURS

Many comments and the FCC seem to assume that one DTV contour, the "Cliff", is all that is needed. Fireweed suggests considering DTV planning factors and contours similar to NTSC.

With NTSC, the farther from the transmitter, the noisier the picture. Digital transmission trades **noise in the picture** for **probability of a picture**. As a digital signal suffers increasing noise, the probability of seeing any picture diminishes. However, if any picture at all is seen, it will be exactly the same as that seen in the TV studio. The NPRM proposed a certain probability of reception (50% of locations 90% of the time) as a "Cliff" grade. Although 90% of the time is not enough (is 90% of a movie good enough for you?), it may be of value for administrative purposes, so long as we remember that viewers can get a bigger antennas to boost the odds.

Fireweed believes the FCC might consider the value of defining better quality service than 50/90, such as; "Grade A DTV" 90%/99.9%; "City Grade DTV" 99%/99.99%. Grade A and City might assume smaller receiver antennas.

With hope the preceding helps to shed light on transition to digital transmission, this Reply Comment is Respectfully Submitted

By: Fireweed Communications Corporation
Licensee of KYES-(TV), Anchorage, Alaska and translators

By Jeremy D. Lansman
President
January 23, 1997